NECESSITY OF STANDARDIZING MATERIA MEDICA PRODUCTS.

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IT GOES without saying that there can be no uniformity in therapeutic effects of materia medica products which essentially differ from each other in character, quality and strength. The necessity for authoritative standards with which to measure the brands of manufacturers is, therefore, generally recognized, and every civilized country has its pharmacopœia devised for that purpose.

The United States Pharmacopœia was originally devised, and is decenially revised, by a committee appointed by a congress of physicians and pharmacists representing all parts of the nation. This committee is made up of the very best men in the departments of work comprising the field of the pharmacopœia. It is therefore safe to assume that the United States Pharmacopœia is a far better standard than that set up by any individual or firm.

The pharmacopœias of all countries except the United States, Chile, Mexico, and Greece, are issued under the authority of the respective governments, and therefore partake of the nature of national laws. In this country conformity with pharmacopœial standards is purely a question of choice. The natural consequence is that the market is flooded with pharmaceutical preparations under pharmacopœial names which differ so essentially in character that they will not even mix with each other, although supposedly identical. Unauthorized preparations, of secret or semi-secret composition, abound, and are extensively advertised to the medical profession, and also to the people, as marvelous therapeutic discoveries, only to fall into merited oblivion after a short popularity, because lacking in virtue as remedial agents.

There is only one remedy for this deplorable state of affairs, and that is standardization of materia medica products to conform to common standards fixed by authority. Every new materia medica product on the market should be given a name under which all pharmacists should be free to make and sell it. Tests for its identity should be determined, and standards for its character, quality and strength established. Products appearing on the market under the names decided upon should correspond with these standards, or be considered fraudulent. This plan would free the products from commercial control and enable physicians to discuss their merits unreservedly in the medical societies without fear of reprisal from the manufacturers in cases of adverse expression regarding their therapeutic merits. Medical editors would then be in a position to act in a judicial manner in relation to new products without the risk of losing advertising patronage. There can be no free discussion, or free press, under a system of espionage and retaliation established by commerce in its relations with materia medica products.

It will doubtless be said by many that these assertions are self-evident and need no defense. But this does not alter the fact that the condition of the market is most unsatisfactory so far as materia medica products are concerned.

A few illustrations which have come under my personal observation will show the necessity of taking some action looking toward a better state of affairs. Some public institutions are supplied with medicine by advertising for bids and accepting the goods offered by the lowest bidder. Unless pharmacopœial standards are specified, preparations are sometimes offered, and accepted, which fall below pharmacopœial requirements. One of the leading officials in a department of the government told me that he once protested against a preparation because it was not up to the standard of the pharmacopœia, only to be impudently informed that pharmacopœial products were not specified and no manufacturer thought of offering pharmacopœial products unless specified. I have it from good authority that hospitals are sometimes supplied with half-strength fluid extracts, and pills containing less of the active ingredients than the pharmacopœia calls for. The excuse is that so long as conformity to pharmacopœial standards is a matter of choice, manufacturers who choose to ignore the pharmacopœia, and adopt a standard of their own, have a perfect right to do so.

The pharmacopœia defines fluid extracts to be preparations made by extracting the active principles from drugs by a certain process, using specified solvents of definite strength, carefully selected by the pharmacopœial committee for the purpose, and made of such strength that 100 c.c of the finished product shall contain in each case the active principles of 100 gm of the drug. Prepared in this way the fluid extract of any given drug will mix with the make of all other manufacturers using the pharmacopœial process, without precipitation; and, barring the inequality of the various samples of the same drug, will be uniform in therapeutic effect, no matter by whom manufactured.

But I venture to say that there are very nearly as many processes for the manufacture of fluid extracts as there are manufacturing houses, each claiming that its method of preparation is the

best. Consequently there are different standards of character and differences of opinion between physicians regarding the merits of different brands of products on the market. This forces the druggists to carry a number of brands in stock to meet the demands of the profession, and thus lock up their capital by useless duplication—useless because all brands should conform to common standards. One druggist with whom I am acquainted, is forced to carry no less than twelve brands of a certain product in stock. His place of business is Los Angeles, California, where there is a very wide range of demand, owing to the presence of tourists from all parts of the country.

Pharmacists frequently complain that prescriptions are brought to them for renewal by persons from some other part of the country, which, after they have been compounded, differ so materially from the medicine furnished before as to cause great dissatisfaction on the part of the patient. Naturally the blame is placed upon the pharmacist, whose reputation correspondingly suffers. This could not occur if pharmacopœial standards were properly observed all over the country.

A very amusing incident occurred in New York City not long ago. I got the story from both physician and pharmacist in the case, and so heard both sides of the story. The incident I am about to relate will illustrate the necessity of standardization in connection with the materia medica product in question. I refer to hexamethyl-tetramine. It is offered on the market under several names, as *formin, cystogen, urotropin,* etc., by different chemical houses, and a great many physicians and pharmacists do not know that these names mean the same thing.

In the case referred to the article was prescribed under its proper chemical name, and the pharmacist to whom the prescription was taken sent all over the city to purchase an ounce of it, but no wholesale house or manufacturer had ever heard of it. At last the pharmacist telephoned to the doctor, who, being interrupted at the breakfast table, informed the knight of the pestle that he did not know his business. After some further uncomplimentary remarks on both sides, the fact developed that the pharmacist had three ounces of the product in stock, under three different names, and did not recognize it under its chemical name. As the doctor was indifferent as to the brand dispensed, the incident closed without further trouble.

A question arises in this connection: Would the pharmacist have been justified in dispensing formin or urotropin, if cystogen had been prescribed? In other words, is it the intent of the prescriber when he writes for cystogen, formin or urotropin to specify any special brand of hexamethyl-tetramine? Or is the physician a victim of his own ignorance? Has the pharmacist the right to dispense hexamethyl-tetramine, no matter under which of the several synonyms it is prescribed? If so, does the same rule apply to antikamnia, listerine, et al? Whatever the reason, it is a fact that the pharmacists of this country are becoming very restive over a state of affairs which forces them to carry half a dozen or more brands of products in stock. There are probably eight or ten brands of many such preparations. Why not establish standards for them by placing preparations of definite formulas in the pharmacopœia and provide them with names conformable with the nomenclature of science? Then the pharmacist would have the opportunity of purchasing any brand he found to correspond with the standard, or supply his own brand if he desired to do so.

Of course the answer from the manufacturer will be that the druggist cannot be trusted to select the best brand on the market; neither is he provided with facilities in the way of selecting material and manufacturing to compete with the first introducer of a new pharmaceutical preparation, who makes it a specialty and takes great care to supply a superior article. There is much truth in the manufacturers' contention. Pharmacists, in many instances, will buy only where things are cheap. For this reason I have always advocated that brands should be provided with brand names or "word-marks" by which they may be specified. But the products themselves, under their product names, should be open to competition, so that manufacturers may vie with each other in keeping up the quality. The manufacturer who produces the highest quality of quinine at the lowest price should have the trade. Why does not the same thing apply to antikamnia, listerine, formalin and all the rest? This would place the so-called "proprietary" medicine business on the same basis as the condensed milk business. Condensed milk is a product free to science and commerce alike, but the word "Eagle," to distinguish a brand of condensed milk, is controlled by the manufacturer and used by him as his trade-mark, word-mark or commercial signature. The function of the trade-mark is to point out the manufacturer by distinguishing his brand from other brands of the same product. It is not the function of the trade-mark to point out the goods. That is the function of the title. Therefore it is an axiom of law that titles cannot be trade-marks.

In a country where the question of conforming to standards is a matter of choice, some means must be devised to separate the sheep from the goats. I have frequently advocated in papers contributed to the medical societies and press the establishment of a bureau of materia medica with which physicians, pharmacists and manufacturers may voluntarily co-operate for the purpose of establishing and maintaining the standards of the pharmacopœia. The interests

involved could, if they chose, inaugurate such a bureau, and so conduct its affairs as to guarantee the standards of preparations marketed under its auspices. The bureau would be in a position to study the problems now facing the practice of pharmacy and drug therapeutics, and could assist in settling them satisfactorily to all concerned. The work of such a bureau would in no way interfere with that of the committee for revising the pharmacopœia. On the contrary, it would supplement and greatly assist it. In fact, such a bureau might be made up of members of the revision committee, and other experts, and prove of the greatest service to the professions of medicine and pharmacy, and to the public.

As I stated in my paper entitled "Proposed National Bureau of Materia Medica," published in the Journal of the American Medical Association for April 27, 1901, the objects of such a bureau would be: (1) to establish the standards of the materia medica preparations on the market and keep them under analytical and pharmacodynamic observation, with the aid and co-operation of the expert chemists, physiologists, biologists, botanists, pharmacologists and clinicians connected with the medical schools and colleges, and the pharmacists and manufacturers of medicinal drugs and chemicals; (2) to act as the medium of communication between the scientific workers in the laboratories, hospitals and clinics engaged in the investigation of new materia medica products, and those engaged in manufacturing and marketing them, to develop the knowledge of their origin, genesis, nature, composition, methods of manufacture, standardization, pharmacodynamic properties and therapeutic uses; (3) to collect the knowledge of materia medica products, reduce it to law, embody it in system and publish it for the benefit of science; (4) to aid the manufacturers of materia medica products and preparations who conform their goods to recognized standards in the introduction of their brands to commence by advocating that the medical profession in prescribing shall specify those brands that are marketed under the guarantee of such a bureau, and are thus shown to comply with scientific and professional requirements.

CERTIFIED MINERAL WATERS.

Dr. C. W. Chancellor, of Washington, D. C., contributes an article on mineral waters to *American Medicine*, concluding as follows:

"In collecting and dispensing mineral waters the utmost care should be taken to preserve the gases and prevent decomposition of the chemic constituents. This can only be accomplished by bottling the water at the spring. A quart or half-gallon bottle will answer the purpose. Care should be taken to have the vessel thoroughly clean; the cork should be new and clean, and fit well. The bottle should be plunged into the water with the mouth well under the surface. Fill to the neck, then insert the stopper, previously well soaked in hot water, and cover with a piece of clean muslin, wash-leather, or gutta-percha tissue, tie securely and seal.

"Barrels, carboys, demijohns and jugs are to be avoided; water should never be decanted from one vessel to another. In filling bottles, unless at the spring, the gases unavoidably escape, the chemic ingredients become decomposed and, what is worse, the water is exposed to the influence of the surrounding atmosphere, often contaminated and filled with spores, germs and other low forms of life, which find their way into the water and cause disease among those who drink it. Under no circumstances should bottles be refilled until they have been thoroughly cleansed and sterilized by washing them with strong sulphuric acid, followed by ordinary pure water, until there is no longer any taste of acid, and finally rinsing them with some of the water to be bottled. All this, however, should be performed at the spring.

"No one who has paid any attention to the subject could fail to observe the incredible filthiness which is too often practised in handling empty mineral water bottles. The uncorked, empty bottle, for which a rebate is allowed, is sometimes disposed of to junk dealers, or temporarily stored in some filthy cellar, outhouse, stable, bathroom, water-closet, or it may be in a room infected with dangerous micro-organisms. In this way the bottle becomes filled with bacteria, which are omnipresent in the air of such places, and once having entered the bottle they can not be displaced by ordinary rinsing. It has been observed, moreover, that returned bottles sometimes bear unmistakable evidences of having been used for very uncleanly purposes.

"To ensure safety, no bottle should be refilled except at the spring, and after having been thoroughly sterilized. A new and fresh bottle is, of course, to be preferred. The bottling should be done in the presence of a responsible officer, who should affix his seal of office to each bottle. Certainly a compulsory system of inspecting mineral waters might be inaugurated, after the fashion of milk inspection in many cities.

"In 1893 the term 'certified milk' originated in New Jersey. A commission was organized with the view to ensure milk properly prepared and properly handled; buildings were required to be well constructed, drained and ventilated, and the milk kept apart from all sources of contamination. Cows were required to be handled by milkers with clean overalls and clean hands; the milk packed in glass jars, thoroughly cleansed and sterilized, and hermetically sealed. These jars are then labeled 'Certified Milk,' and no other milk is allowed to be sold. Why should we not also have our mineral waters inspected and labeled 'Certified Water?' "